

PATENT ABSTRACTS OF JAPAN

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(71)Applicant : KOKUSAI ELECTRIC CO LTD

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(72)Inventor : TSUNODA HISAMI

URABE KENZO

ONO YASUHIRO

HATA YOSHIYUKI

SUZUKI HIROSHI

(54) VIDEO CONFERENCE DEVICE

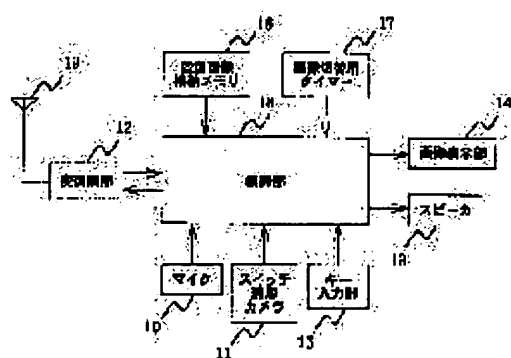
(57)Abstract:

PROBLEM TO BE SOLVED: To prevent an unintended image from being shown to an opposite side carelessly by visually displaying a state (image transmission state) wherein an image picked up by a camera is transmitted and a state (image nontransmission state) wherein no image is transmitted although an image is photographed by a camera.

SOLUTION: The video conference device is constituted by providing a device housing 1a with a pocket where the camera 2 is stored and also forming a hole 1d for exposing the lens 2a of the camera even in its stored state. A changeover switch 11 for switching the process state of the image photographed by the camera 2

between the image transmission state and image

nontransmission state, and the state is switched to the image nontransmission state when the camera is stored and to the image transmission state when the camera is projecting from the pocket. Then a control means 18 displays a received opposite-side image on a screen 1b and also transmit this side image to the opposite side in the image transmission state, and displays this side image on the screen 1b and sends an alternative image to the opposite side



in the image nontransmission state.

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CLAIMS

[Claim(s)]

[Claim 1] A transmitting means to transmit the speech information and image information which were incorporated with the microphone which incorporates voice, the camera which photos an image, and a microphone and a camera, In TV phone equipment equipped with a receiving means to receive the speech information and image information which have been transmitted, the loudspeaker which outputs the voice based on the speech information which received, and the image display means which carries out the display output of the image based on image information to a screen The circuit changing switch which changes the processing state of the image photoed with the camera to an image send state and an image non-send state, An operating state display means to display the processing state of an image visually synchronizing with actuation of a circuit changing switch, When it is in an image send state, while displaying on a screen the other party image received from the receiving means and making the information on the oneself side image photoed with the camera transmit from a transmitting means TV phone equipment characterized by having the control means to which the information on the alternative image beforehand set up while displaying on the screen the oneself side image photoed with the camera, when it was in an image non-send state is made to transmit from a transmitting means.

[Claim 2] A transmitting means to transmit the speech information and image information which were incorporated with the microphone which incorporates voice, the camera which photos an image, and a microphone and a camera, In TV phone equipment equipped with a receiving means to receive the speech information and image information which have been transmitted, the loudspeaker which outputs the voice based on the speech information which received, and the image display means which carries out the display output of the image based on image information to a screen The housing of TV phone equipment with the hole which makes the lens of a camera expose in the condition of having contained the camera in the pocket concerned while having the pocket contained possible [receipts and payments of a camera], A circuit changing switch with the pop-up device which a camera is made to project from a pocket and is changed to an image send state while a camera considers as an image non-send state, after having been contained by the pocket, When it is in an image send state, while displaying on a screen the other party image received from the receiving means and making the information on the oneself side image photoed with the camera transmit from a transmitting means TV phone equipment characterized by having the control means to which the information on the alternative image beforehand set up while displaying on the screen the oneself side image photoed with the camera, when it was in an image non-send state is made to transmit from a transmitting means.

[Claim 3] It has further the timer which operates in TV phone equipment according to claim 1 or 2 based on having changed from the image non-send state to the image send state with the circuit changing switch. When it changes from an image non-send state to an image send state, a control means The information on the alternative image beforehand set up while continuing and displaying on the screen the oneself side image photoed with the camera, when the timer value had not reached predetermined default value is made to continue and transmit from a transmitting means. TV phone equipment characterized by making the information on the oneself side image photoed with the camera while

displaying on the screen the other party image received from the receiving means, when a timer value reached predetermined default value transmit from a transmitting means.

[Claim 4] It is TV phone equipment which is further equipped with the directions switch positively set as any 1 term of claim 1 thru/or claim 3 in the TV phone equipment of a publication at an image send state, and is characterized by to make the information on the oneself side image photoed with the camera the condition [the directions from a directions switch] transmit from a transmitting means even if there is a control means, when it is in the power up of TV phone equipment at an image send state.

[Claim 5] It is TV phone equipment characterized by performing a line connection based on the control means having been changed to the image send state with the circuit changing switch in TV phone equipment given in any 1 term of claim 1 thru/or claim 4 at the time of a call in.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the TV phone equipment which controls transmission of a oneself side image and realizes privacy protection in respect of an image especially about the TV phone equipment which transmits and receives an image with voice.

[0002]

[Description of the Prior Art] In addition to the function of the telephone which transmits and receives speech information, TV phone equipment is a communication device with the transceiver function of image information, and can carry out a screen display of the images, such as an image of the operator who is operating TV phone equipment, and data, to the TV phone equipment of a receiving side. That is, TV phone equipment has the image display means which carries out the display output of the image based on the camera which photos an image as a pictorial communication part, and the image information which received to a screen while having the microphone which incorporates voice as a telephone functional division, and the loudspeaker which outputs the voice based on the speech information which received. And a receiving means receives the speech information and image information which transmitted the speech information and image information which were incorporated with the microphone and the camera with the transmitting means through the circuit, and have been transmitted through a circuit from the other party, and it outputs to a loudspeaker and the display screen.

[0003]

[Problem(s) to be Solved by the Invention] If it was in TV phone equipment as mentioned above, since images (namely, oneself side image), such as an operator image of a transmitting side and data, were transmitted to the receiving side, an image will be carelessly displayed on a receiving side (other party) against an operator's mind, and there was a problem said that protection of secrecy or privacy is missing. On the other hand, even if it was in conventional TV phone equipment, the function to suspend transmission of a oneself side image as a privacy protection feature was added, but if it was in the former, it was not that to which the screen-display gestalt at the time of performing spoils the value as a product, and activation of the function concerned may be ensured, either.

[0004] That is, with conventional TV phone equipment, in order not to transmit a oneself side image by the mechanical method of closing the shutter of a camera, the deep-black screen by which the blind was carried out will be displayed on the TV phone equipment of the other party, and unpleasant sensation might be given to the other party. Moreover, since this function was not performed unless an operator performs actuation which closes a shutter, the situation where a oneself side image will be carelessly transmitted to the other party against mind was not what can be prevented certainly.

[0005] This invention was made by the above-mentioned former in view of the situation, and aims at offering the TV phone equipment which prevents certainly the situation where an image will be carelessly displayed on the other party against an operator's mind. Moreover, this invention aims at offering the TV phone equipment which makes an operator grasp certainly whether which condition has

transmission of an image by carrying out popping up a camera etc. and displaying visually the condition (image send state) of transmitting the image photoed with the camera, and the condition (image non-send state) of not transmitting even if it photos an image with a camera, to an operator.

[0006]

[Means for Solving the Problem] In order to attain the above-mentioned object, it has the circuit changing switch which changes the processing state of the image photoed with the camera to an image send state and an image non-send state, and if a circuit changing switch is operated by the operator, the processing state of the image which the operating state display means photoed with the camera synchronizing with this actuation will be visually expressed as the TV phone equipment concerning this invention. That is, it displays visually or the mode which the camera was popped up and said the image send state as burning of a lamp, the message indicator to a display screen top, etc. so that it might mention later and as which an operator can grasp the condition concerned visually is displayed.

[0007] And while displaying on a screen the oneself side image which it photoed with the camera when it was [when a control means was in an image send state,] in an image non-send state while it displayed on the screen the other party image received from the receiving means, and it made the information on the oneself side image photoed with the camera transmit from a transmitting means, the information on the alternative image which set up beforehand makes transmit from a transmitting means. Therefore, when it is in an image non-send state, while preventing the situation where will make the alternative image beforehand set to the other party transmit, and the display output of the oneself side image will be carelessly carried out by the other party, the oneself side image photoed with the camera is displayed on the screen of self equipment, and an operator is made to grasp the condition concerned. Moreover, although the communication link with a oneself side image and the other party image is performed when it is in an image send state, the situation where the image which displayed the condition concerned visually and was contrary to an operator's mind as mentioned above will be transmitted is prevented.

[0008] Moreover, with the TV phone equipment concerning this invention, while preparing the pocket contained possible [receipts and payments of a camera] to the housing of TV phone equipment, the hole which makes the lens of a camera expose also in the condition of having contained the camera in the pocket concerned is prepared. And the circuit changing switch which changes the processing state of the image photoed with the camera to an image send state and an image non-send state is equipped with a pop-up function, and where a camera is contained in a pocket, while considering as an image non-send state, in the condition of having popped up the camera and having made it projecting from a pocket, it changes to an image send state.

[0009] And when a camera projects from a pocket and a control means is in an image send state, while displaying on a screen the other party image received from the receiving means and making the information on the oneself side image photoed with the camera transmit from a transmitting means When a camera is contained by the pocket and is in an image non-send state, while displaying on a screen the oneself side image photoed with the camera through the hole, the information on the alternative image set up beforehand is made to transmit from a transmitting means. Therefore, it makes it grasp visually using the pop-up function of a camera whether an operator has at an image send state, or it is in an image non-send state, and the image which was contrary to an operator's mind as mentioned above prevents the situation transmitted carelessly.

[0010] Moreover, it has further the timer which operates based on having changed from the image non-send state to the image send state with the circuit changing switch, and a control means makes transmission of a oneself side image start with the time lag by this timer value with the TV phone equipment concerning this invention. Namely, when the processing state of the image photoed with the camera is changed from an image non-send state to an image send state, a control means The information on the alternative image beforehand set up while continuing and displaying on the screen the oneself side image photoed with the camera, when the timer value had not reached predetermined default value is made to continue and transmit from a transmitting means. When a timer value reaches predetermined default value, while displaying on a screen the other party image received from the receiving means, the information on the oneself side image photoed with the camera is made to transmit

from a transmitting means. Therefore, since transmission of a oneself side image is performed with a certain forbearance time amount from actuation of a circuit changing switch, the situation where the image contrary to an operator's mind will be transmitted immediately is prevented by having carried out switch actuation carelessly. X

[0011] Moreover, it has further the directions switch for an operator to set it as an image send state positively, and when it is in the power up of TV phone equipment at an image send state, even if there is a control means, it makes the information on the oneself side image photoed with the camera the condition [the directions from a directions switch] transmit from a transmitting means with the TV phone equipment concerning this invention. Therefore, when TV phone equipment suits a power up at an image send state, as long as there are no positive directions from an operator, transmission of a oneself side image is not performed. For this reason, the situation where the image contrary to an operator's mind will be transmitted is prevented by a oneself side image's not being immediately transmitted by powering on, and having performed closing operation of a power source carelessly.

[0012] Moreover, with the TV phone equipment concerning this invention, a control means performs a line connection based on having changed to the image send state with the circuit changing switch at the time of a call in. Therefore, by actuation of popping up a camera, a line connection is performed promptly and the so-called function on hook is realized.

[0013]

[Embodiment of the Invention] The TV phone equipment concerning 1 operation gestalt of this invention is explained with reference to a drawing. As shown in drawing 1, the personal computer 1 which has communication facility realizes, and the TV phone equipment of this operation gestalt shows the condition of having contained the camera 2 to housing 1a of a personal computer in this drawing (a), and has shown the condition of having projected the camera 2 from housing 1a of a personal computer (namely, exposure) in this drawing (b). In addition, screen 1b which carries out the display output of the image, and keyboard 1c to which an operator keys are prepared in the personal computer 1.

[0014] The pocket which holds a camera 2 is prepared in housing 1a of a personal computer, and it will be in the condition which shows in drawing 1 (a) by making a camera 2 hold in the pocket concerned. Moreover, 1d of holes which lead to a pocket is formed in housing 1a, and the camera 2 is making the lens 2a expose through 1d of holes also in the condition of having been contained in the pocket. Therefore, a camera 2 can photo an image now also not only in the exposure made to project from a pocket but in the condition of having been contained in the pocket.

[0015] The spring which energizes a camera 2 in the projection direction into the pocket part of housing 1a, The well-known pop-up device with the stopper which resists a spring and holds a camera 2 in the receipt condition is established. In making it the exposure shown in drawing 1 (b) from the receipt condition shown in drawing 1 (a) Actuation detached once an operator pushes a camera 2 on the interior of a pocket is performed, and in changing into the receipt condition shown in drawing 1 (a) from the exposure shown in drawing 1 (b), an operator performs actuation which pushes in a camera 2 into a pocket as it is. In addition, it operates the switch concerned, in forming a switch separately and popping up a camera 2 (it is made to project), in order to cancel maintenance, and you may make it make a camera 2 project from a pocket according to the spring force.

[0016] The above-mentioned pop-up device also constitutes the circuit changing switch which changes the processing state of the image photoed with the camera 2, and make it into the image non-send state which does not transmit the oneself side image photoed with the camera 2 to the TV phone equipment of the other party, and where a camera 2 is contained in a pocket, where a camera 2 is exposed from a pocket, let it be the image send state which transmits the oneself side image photoed with the camera 2 to the TV phone equipment of the other party. Therefore, an operator can grasp the condition of an image processing easily while he can perform to one actuation which related change actuation of transmitting processing of the image which the send state of the oneself side image photoed with the camera 2 has grasped visually according to the condition of a camera 2, and was photoed with the camera 2 with the photography actuation referred to as contained or exposing a camera and can operate it easily. In addition, the image which the display output of the image photoed with the camera 2 in the

image non-send state was carried out to screen 1b of the TV phone equipment of self, and was photoed with the camera 2 under predetermined conditions also in the image send state for privacy protection etc. is transmitted to the TV phone equipment of the other party so that it may mention later.

→ [0017] Next, the internal configuration of TV phone equipment is explained with reference to drawing 2. The microphone 10 which incorporates voice to TV phone equipment, and the circuit changing switch 11 which consists of the camera 2 and the above-mentioned pop-up device which photo an image, The strange recovery section 12 which transmits and receives speech information and image information, and the loudspeaker 13 which outputs voice, The image display section 14 which makes screen 1b indicate the image by the output, and the key input section 15 which receives the input from keyboard 1c, The storing memory 16 which stored the alternative image which transmits the TV phone equipment of the other party, It has the timer 17 which counts the change timing to an image send state, and the control section 18 which generalizes and controls the change to an image send state and an image non-send state, and processing of each above-mentioned means 10-17. In addition, although TV phone equipment transmits in this example and receives speech information and image information on radio through an antenna 19, you may make it transmit and receive through a wire circuit, of course.

wire
cr
X [0018] Here, the circuit changing switch 11 of this example consists of switch combination cameras which made the switch for distinction with an exposure and a receipt condition serve a double purpose as described above, and a control section 18 processes the oneself side image photoed with the camera 2 in the state of pictorial communication condition or image un-communicating based on the input from a circuit changing switch 11. Moreover, registration storing of the image without the offense of a blue back image, a landscape image, etc. is carried out beforehand, and the registered image concerned is transmitted to the storing memory 16 of this example through the strange recovery section 12 to the other party in image the condition of not communicating etc.

[0019] Moreover, the information on the it side image who took a photograph with the camera 2 in the place which reached the default value to which, as for the control section 18, this timer value was beforehand set even if it was, when it operated based on the timer 17 of this example having been changed to the image send state from an image non-send state with the circuit changing switch 11 and changed to the image send state from an image non-send state is made to transmit to the other party. The control section 18 has the memory which stored the program concerning control processing that image processings etc. are various, and the processor which performs the program concerned, and controls transmitting processing of the image used as the summary of this invention.

[0020] Next, it explains with reference to the flow chart which shows processing by above TV phone equipment to drawing 3 - drawing 6. The transmission of the image under call of TV phone equipment mainly performed by the control section 18 and the procedure of display processing are shown in drawing 3. When the control section 18 is always supervising during a call whether the camera 2 was changed between the exposure and the receipt condition with the circuit changing switch 11 (step S1) and this change actuation is performed, the condition change of the image processing which had time lag based on the timer value of a timer 17 so that it might mention later based on drawing 4 is performed (step S2).

[0021] When such change actuation is not performed, it judges whether a control section 18 is in the condition that whether a camera's 2 projecting from a pocket and being in an exposure at present and a camera 2 were contained in the pocket (step S3). When a camera 2 is in an exposure as a result of this decision, a control section 18 outputs the other party image which outputted the oneself side image photoed with the camera 2 to the strange recovery section 12, and was made to transmit to the TV phone equipment of the other party (step S4), and was received from the strange recovery section 12 to the image display section 14, and is made to display it on screen 1b (step S5). That is, when a camera 2 is in an exposure during the usual call, the oneself side image which the other party's image was displayed on screen 1b of the TV phone equipment of self, and was photoed with the camera 2 is displayed on the screen of the other party's TV phone equipment.

[0022] Moreover, when a camera 2 is in a receipt condition as a result of the above-mentioned decision, a control section 18 outputs the oneself side image which read the registered image from the storing

memory 16, outputted the registered image concerned to the strange recovery section 12, and was made to transmit to the TV phone equipment of the other party (step S6), and was photoed with the camera 2 to the image display section 14, and is made to display it on screen 1b (step S7). That is, when a camera 2 is in a receipt condition during the usual call, the oneself side image photoed with the camera 2 is displayed on screen 1b of the TV phone equipment of self, and registered images, such as a blue back image, are displayed on the screen of the other party's TV phone equipment. Therefore, exposure of a camera 2 or the receipt condition, the image displayed on screen 1b, and the image transmitted to the other party are connected, thereby, an operator can grasp clearly what kind of image is transmitted with the condition and display image of a camera 2, and the situation where the image which was carelessly contrary to mind will be transmitted is prevented.

[0023] The procedure of the image change processing under call of the above-mentioned TV phone equipment (step S2) is shown in drawing 4, and this processing is also mainly performed to it by the control section 18. First, when the condition of a camera 2 is changed, a control section 18 makes initial value reset a timer 17 (step S11), and it judges how the change of a camera was performed (step S12).

[0024] When a camera 2 is changed from an exposure to a receipt condition as a result of this decision A control section 18 reads a registered image from the storing memory 16, it is replaced with the oneself side image photoed with the camera 2, outputs the registered image concerned to the strange recovery section 12, and makes it transmit to the TV phone equipment of the other party immediately (step S13). Moreover, it replaces with the other party image received from the strange recovery section 12, the oneself side image photoed with the camera 2 is outputted to the image display section 14, and it is made to display on screen 1b (step S14). That is, when a camera 2 is changed by the receipt condition during a call, the oneself side image photoed with the camera 2 is immediately displayed on screen 1b of the TV phone equipment of self, and registered images, such as a blue back image, are immediately displayed on the screen of the other party's TV phone equipment. Therefore, the situation where the image contrary to mind will be transmitted is prevented by changing a camera 2 to a receipt condition.

[0025] moreover, when a camera 2 is changed from a receipt condition to an exposure as a result of the above-mentioned decision A control section 18 starts a timer 17. Predetermined convention time amount In the place where (for example, for 5 seconds) was made to count at (step S15), and the counted value of a timer 17 reached convention time amount (Step S16), The other party image which outputted the oneself side image photoed with the camera 2 to the strange recovery section 12, and was made to transmit to the TV phone equipment of the other party (step S17), and was received from the strange recovery section 12 is outputted to the image display section 14, and it is made to display on screen 1b (step S18). While the counted value of a timer 17 has not reached convention time amount, on the other hand, (step S16) and a control section 18 Read a registered image from the storing memory 16, replace with the oneself side image photoed with the camera 2, output the registered image concerned to the strange recovery section 12, and it is made to transmit to the TV phone equipment of the other party (step S19). Moreover, it replaces with the other party image received from the strange recovery section 12, the oneself side image photoed with the camera 2 is outputted to the image display section 14, and it is made to display on screen 1b (step S20).

[0026] Namely, when a camera 2 is changed by the exposure during the usual call, a oneself side image will not be promptly transmitted to the other party after change actuation. After setting the time lag of a certain fixed period, a oneself side image is transmitted to the other party. Therefore, a oneself side image can distinguish easily when it begin to be transmitted by change actuation of a display image and a camera 2, and, as for an operator, the situation where the image which was carelessly contrary to mind will be transmitted is prevented. X

[0027] The procedure of the processing performed when a camera 2 is in an exposure and a power source is supplied to TV phone equipment is shown in drawing 5, and this processing is also mainly performed to it by the control section 18. first, when a power source is switched on (step S31), output the oneself side image which was alike in a control section 18 being in a receipt condition as a camera 2 is an exposure, and was not concerned, but was photoed with the camera 2 in the image display section 14, and it is made to display on screen 1b (step S32), and it stands by in the condition of awaiting the

call origination from the other party (step S33), and the existence of the arrival from the other party is supervised (step S34).

[0028] When there is arrival from the other party, a control section 18 performs reception later mentioned based on drawing 6 (step S35), and performs connection processing of a circuit after that (step S37). On the other hand, it is carrying out by repeating the processing after the above-mentioned step S32, and it judging whether the telephone number of a transmission place was inputted from the key input section 15, when there is no arrival from the other party (step S36), and displaying a oneself side image on screen 1b on the other hand (step S37), when [which performs connection processing of a circuit] not inputted when inputted is continued. That is, in a camera 2, when a power source is supplied to TV phone equipment with an exposure, a oneself side image is displayed on screen 1b until a circuit is connected, and the non-send state of an image is displayed visually.

[0029] The procedure of the reception (step S35) in the power up of the above-mentioned TV phone equipment is shown in drawing 6 , and this processing is also mainly performed to it by the control section 18. First, when the other party receives a message, a control section 18 and the call origination signal to a loudspeaker 13 are outputted, and an operator is notified of arrival of the mail (step S41). And when it judges whether a control section 18 has a camera 2 in an exposure (step S42) and a camera 2 is in an exposure, only the usual function on hook is made validity (step S43), (carbon button on hook etc.) it is that a camera 2 is in an exposure (image send state), and the situation where a oneself side image will be suddenly transmitted to the other party is prevented. On the other hand, a control section 18 enables the function on hook and the usual function on hook of the camera combination which performs ONFUKKU by making a camera 2 into an exposure, when a camera 2 is in a receipt condition (step S44).

[0030] Then, if actuation [which] on hook is performed by the operator (step S45), as a control section 18 enables only the usual function on hook and camera combination does not carry out on-hook ***** (step S46), it will perform connection processing of a circuit (step S37). That is, when a camera 2 is in an exposure, the function of camera combination on hook is stopped, with a carbon button on hook etc., on condition that there are positive directions from an operator, a circuit is connected (step S37), and a oneself side image is transmitted to the other party. Therefore, the situation where the image which was carelessly contrary to mind with powering-on actuation will be transmitted is prevented. In addition, in order to receive the positive directions from an operator, assign the key of either of the keyboard 1c to a carbon button on hook, and it is set up, or the switch of dedication is formed separately.

[0031] In addition, although the change of transmitting processing of the image photoed with the camera 2 and the visual display of how the transmitting processing concerned is performed can be simultaneously performed with the above-mentioned operation gestalt since the camera 2 and the pop-up device constituted the circuit changing switch 11 If it carries out from it not being limited to this in this invention, displaying visually the transmitting processing state of the oneself side image photoed with the camera 2, and making an operator recognize easily, it is possible to adopt modes various otherwise. For example, you may make it display by message format etc. as any of an image send state and an image non-send state by forming especially the camera 2 fixed, without considering as a pop-up method, the circuit changing switch 11 is formed as a switch for changing simply an image send state and an image non-send state, and is set with the circuit changing switch 11 on screen 1b.

[0032]

[Effect of the Invention] Since it was made to display with the gestalt which can grasp visually the condition of whether the oneself side image captured with the camera is transmitted to the other party to an operator according to the TV phone equipment concerning this invention as explained above, the situation where the image which was carelessly contrary to mind will be transmitted to the other party is prevented, and protection of privacy or secrecy can be realized effectively. Moreover, since it was made display with the gestalt which is easy to be reminded of the send state of an image that it is easy to recognize the condition of whether the oneself side image captured with the camera is transmitted to the other party with the vision of receipt or projection of a camera using a camera pop-up function according to the TV phone equipment concerning this invention, the image which was carelessly

contrary to mind can prevent still more certainly the situation transmitted to the other party.

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TECHNICAL FIELD

[Field of the Invention] This invention relates to the TV phone equipment which controls transmission of a oneself side image and realizes privacy protection in respect of an image especially about the TV phone equipment which transmits and receives an image with voice.

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PRIOR ART

[Description of the Prior Art] In addition to the function of the telephone which transmits and receives speech information, TV phone equipment is a communication device with the transceiver function of image information, and can carry out a screen display of the images, such as an image of the operator who is operating TV phone equipment, and data, to the TV phone equipment of a receiving side. That is, TV phone equipment has the image display means which carries out the display output of the image based on the camera which photos an image as a pictorial communication part, and the image information which received to a screen while having the microphone which incorporates voice as a telephone functional division, and the loudspeaker which outputs the voice based on the speech information which received. And a receiving means receives the speech information and image information which transmitted the speech information and image information which were incorporated with the microphone and the camera with the transmitting means through the circuit, and have been transmitted through a circuit from the other party, and it outputs to a loudspeaker and the display screen.

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EFFECT OF THE INVENTION

[Effect of the Invention] Since it was made to display with the gestalt which can grasp visually the condition of whether the oneself side image captured with the camera is transmitted to the other party to an operator according to the TV phone equipment concerning this invention as explained above, the situation where the image which was carelessly contrary to mind will be transmitted to the other party is prevented, and protection of privacy or secrecy can be realized effectively. Moreover, since it was made display with the gestalt which is easy to be reminded of the send state of an image that it is easy to recognize the condition of whether the oneself side image captured with the camera is transmitted to the other party with the vision of receipt or projection of a camera using a camera pop-up function according to the TV phone equipment concerning this invention, the image which was carelessly contrary to mind can prevent still more certainly the situation transmitted to the other party.

[Translation done.]

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] If it was in TV phone equipment as mentioned above, since images (namely, oneself side image), such as an operator image of a transmitting side and data, were transmitted to the receiving side, an image will be carelessly displayed on a receiving side (other party) against an operator's mind, and there was a problem said that protection of secrecy or privacy is missing. On the other hand, even if it was in conventional TV phone equipment, the function to suspend transmission of a oneself side image as a privacy protection feature was added, but if it was in the former, it was not that to which the screen-display gestalt at the time of performing spoils the value as a product, and activation of the function concerned may be ensured, either.

[0004] That is, with conventional TV phone equipment, in order not to transmit a oneself side image by the mechanical method of closing the shutter of a camera, the deep-black screen by which the blind was carried out will be displayed on the TV phone equipment of the other party, and unpleasant sensation might be given to the other party. Moreover, since this function was not performed unless an operator performs actuation which closes a shutter, the situation where a oneself side image will be carelessly transmitted to the other party against mind was not what can be prevented certainly.

[0005] This invention was made by the above-mentioned former in view of the situation, and aims at offering the TV phone equipment which prevents certainly the situation where an image will be carelessly displayed on the other party against an operator's mind. Moreover, this invention aims at offering the TV phone equipment which makes an operator grasp certainly whether which condition has transmission of an image by carrying out popping up a camera etc. and displaying visually the condition (image send state) of transmitting the image photoed with the camera, and the condition (image non-send state) of not transmitting even if it photos an image with a camera, to an operator.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the external view of the TV phone equipment concerning this invention.

[Drawing 2] It is the block diagram showing the internal configuration of the TV phone equipment concerning this invention.

[Drawing 3] It is the flow chart which shows the procedure of the image transceiver processing under call.

[Drawing 4] It is the flow chart which shows the procedure of the image change processing under call.

[Drawing 5] It is the flow chart which shows the procedure of the image display processing in a power up.

[Drawing 6] It is the flow chart which shows the procedure of reception when the other party has received a message.

[Description of Notations]

1 ... Personal computer (TV phone equipment) 1a [1c ... Keyboard 1d / 10 ... Microphone 11 / 13 ... Loudspeaker 14 / 17 ... Timer 18 ... Control section, / ... The image display section, 16 ... Registered-image storing memory / ... A circuit changing switch, 12 ... Strange recovery section / ... A hole, 2 ... Camera] ... A housing, 1b ... Screen

[Translation done.]

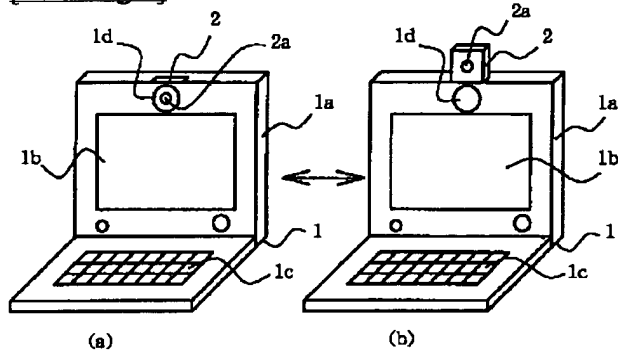
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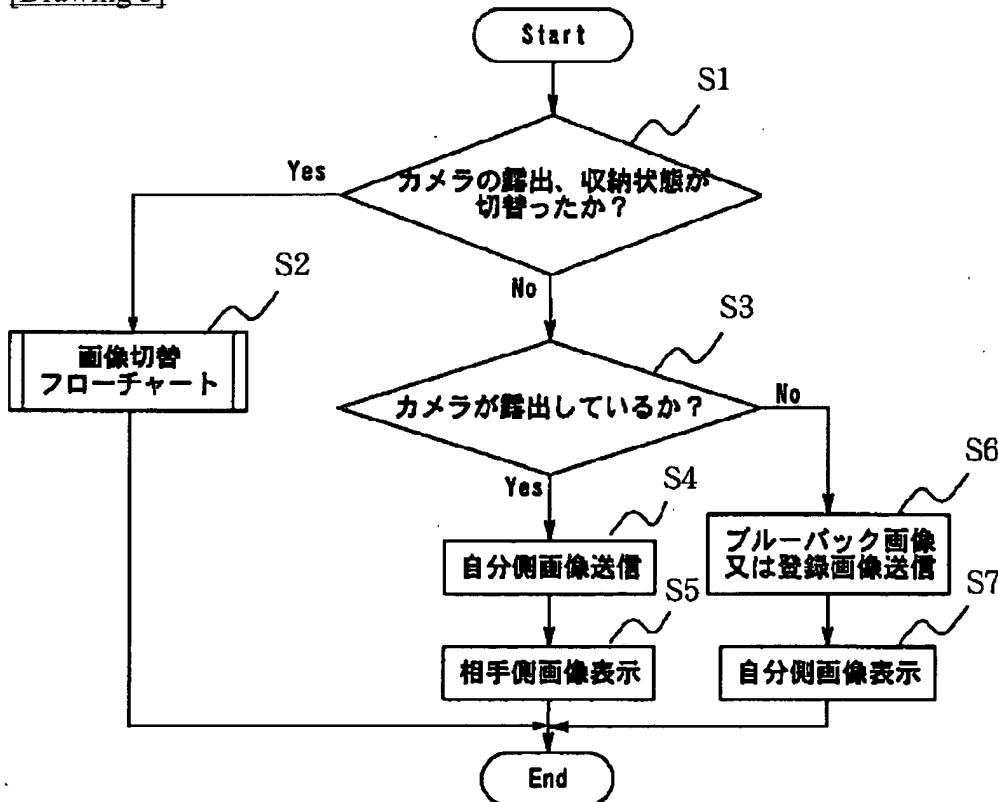
DRAWINGS

[Drawing 1]

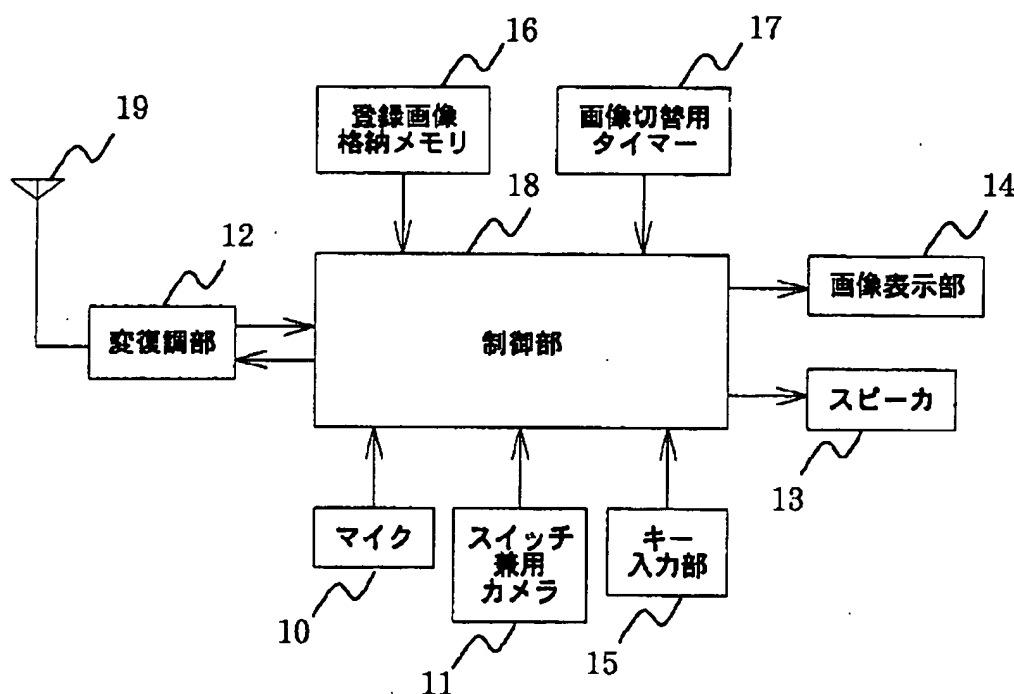


2: Camera
 1a: housing
 1b: Screen
 1c: Keyboard
 1d: hole

[Drawing 3]

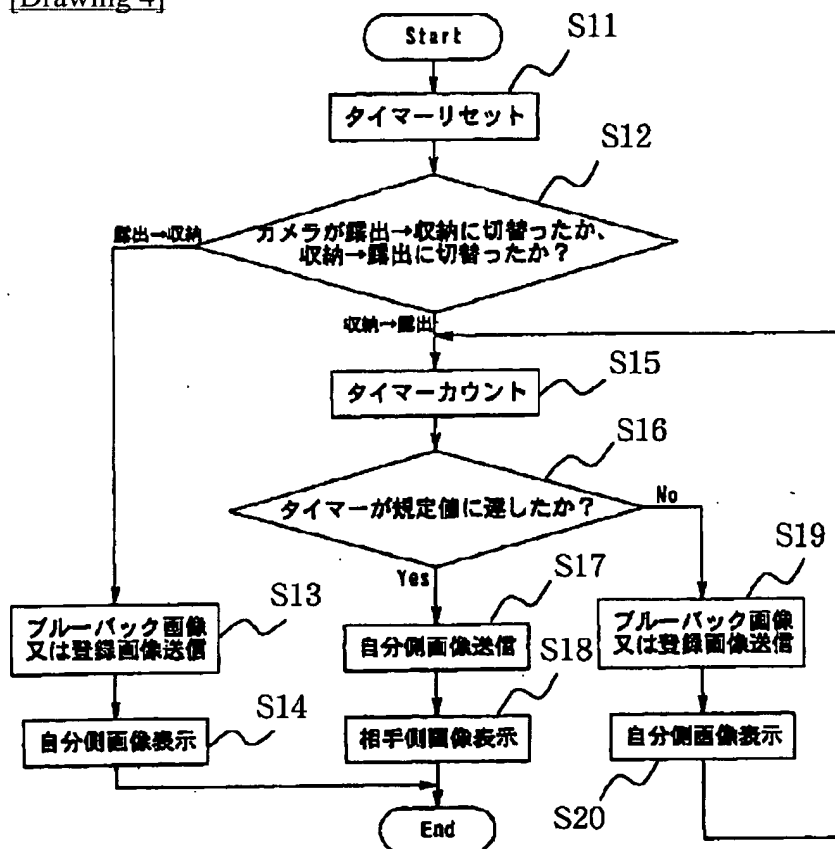


[Drawing 2]

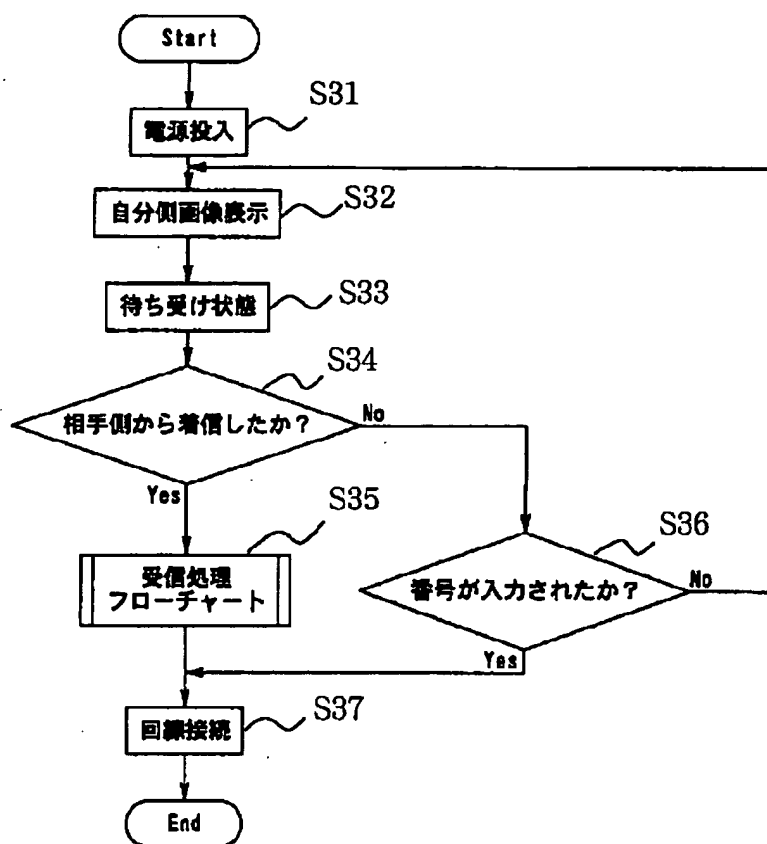


10: microphone
 11: cut changing camera
 12: Stray recovery
 13: loudspeaker
 14: display
 15: Key input
 16: memory
 17: timer
 18: controller

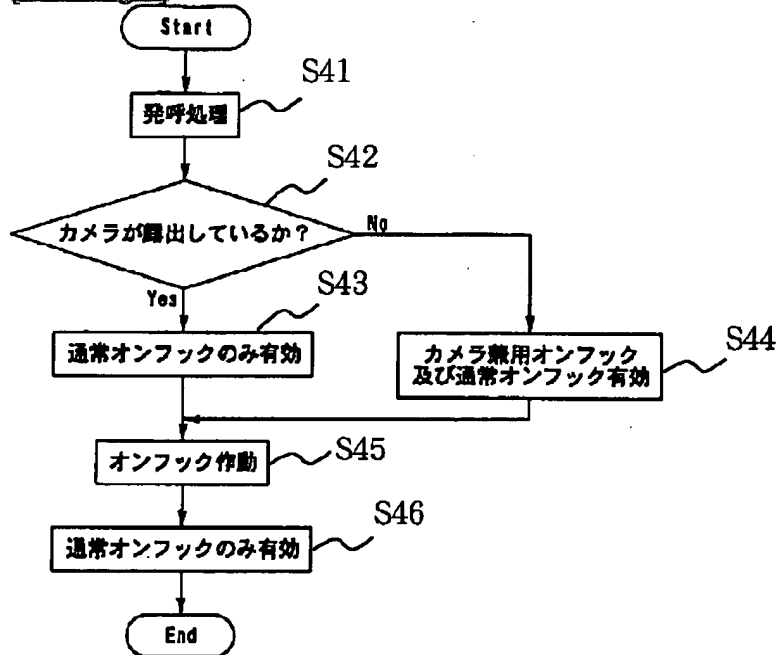
[Drawing 4]



[Drawing 5]



[Drawing 6]



[Translation done.]